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10/036,590	11/07/2001	Thomas W. Smith	D/A1503	4094

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/036,590

Applicant(s)

SMITH ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

eh

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

**Claim Rejections - 35 USC § 103**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-8, 11-20, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of Vieira et al. (U.S. 5,686,633).

The rejection is adequately set forth in paragraph 3 of the office action mailed 1/28/04 and is incorporated here by reference.

3. Claims 1-7, 11-20, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of Yokoyama et al. (U.S. 4,256,493).

The rejection is adequately set forth in paragraph 4 of the office action mailed 1/28/04 and is incorporated here by reference.

4. Claims 1-4 and 10-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of either Bergthaller et al. (U.S. 5,855,657) or Ma et al. (U.S. 6,432,523).

The rejection is adequately set forth in paragraph 5 of the office action mailed 1/28/04 and is incorporated here by reference.

**Response to Arguments**

5. Applicants' arguments filed 4/28/04 have been fully considered but they are not persuasive.

Specifically, applicants argue that:

(a) there is no disclosure of anionic lightfastness agent as presently claimed in Gundlach et al. or any disclosure in Gundlach et al., Bergthaller et al., or Ma et al. of complex between anionic dye, anionic lightfastness agent, and polyquaternary amine compound as required in the present claims.

(b) There is no motivation to combine Gundlach et al., which disclose anionic dye and polyquaternary amine compound, with either Bergthaller et al. or Ma et al. which each disclose anionic lightfastness agent.

(c) There is no disclosure in either Bergthaller et al. or Ma et al. of polyquaternary amine compound.

(d) The only motivation to combine Gundlach et al. with either Bergthaller et al. or Ma et al. is hindsight.

(e) In combining Gundlach et al. with Bergthaller et al. or Ma et al., the examiner is using an obvious to try standard.

(f) No motivation to combine Gundlach et al. with Vieira et al. or Yokoyama et al.

(g) No disclosure in any of the cited references of number of cationic sites on the polyquaternary amine for every one anionic site on the anionic lightfastness agent or any disclosure of the ratio of anionic dye to anionic lightfastness agent as presently claimed.

With respect to argument (a), it is agreed that there is no disclosure of anionic lightfastness agent in Gundlach et al. which is why Gundlach et al., which is drawn to ink jet ink, is combined with either Bergthaller et al. or Ma et al., which are each also drawn to ink jet inks, and which each disclose the use of anionic lightfastness agent identical to that presently claimed.

Gundlach et al. disclose ink jet ink comprising water, non-polymeric salt, anionic dye, and polyquaternary amine compound, but there is no disclosure of anionic lightfastness agent. Vieira et al. and Yokoyama et al. each disclose ink jet ink comprising dye (including anionic dye as found in Bergthaller et al.) and anionic lightfastness agent. Although there is no disclosure in either Gundlach et al., Bergthaller et al. or Ma et al. that the polyquaternary amine, anionic dye, and anionic lightfastness agent form a complex, given that Gundlach et al. disclose that upon mixing the anionic dye and polyquaternary amine compound form a complex and given that the combination of either Gundlach et al. and Bergthaller et al. or Gundlach et al. and Ma et al. disclose anionic dye, polyquaternary amine, and anionic lightfastness agent identical to that presently claimed, it is clear that these three ingredients would intrinsically form a complex as required in the present claims.

With respect to argument (b), it is the examiner's position that there is motivation to combine Gundlach et al. with either Bergthaller et al. or Ma et al.

Gundlach et al. is drawn to ink jet ink and disclose ink comprising anionic dye and polyquaternary amine. Both Bergthaller et al. and Ma et al. are each also drawn to ink jet inks that comprise dye and each provide motivation for using anionic lightfastness agent, i.e. to produce ink with improved colorfastness (Bergthaller et al.) or to produce ink with improved

lightfastness (Ma et al.). Thus, given that either Bergthaller et al. or Ma et al. is drawn to same field of endeavor as Gundlach et al. and given that each of Bergthaller et al. or Ma et al. disclose motivation for using anionic lightfastness agent, it is the examiner's position that there is proper motivation to combine either Gundlach et al. and Bergthaller et al. or Gundlach et al. and Ma et al.

Applicants argue that one would not be led to make an ink wherein both an anionic dye and anionic lightfastness agent are complexed to polyquaternary amine. However, it is noted that Gundlach et al. already disclose that upon mixing the anionic dye and polyquaternary amine form a complex. Given that there is motivation to combine Gundlach et al. with either Bergthaller et al. or Ma et al. as described above, it is clear that upon mixing the anionic dye, polyquaternary amine, and anionic lightfastness agent disclosed by the combination of Gundlach et al. with either Bergthaller et al. or Ma et al., a complex would intrinsically form between the three ingredients.

Although the motivation to combine Gundlach et al. with either Bergthaller et al. or Ma et al. is not to form a complex, the fact remains that upon mixing, it appears that such complex would intrinsically form. Further, it is noted that "obviousness under 103 is not negated because the motivation to arrive at the claimed invention as disclosed by the prior art does not agree with appellant's motivation", *In re Dillon*, 16 USPQ2d 1897 (Fed. Cir. 1990), *In re Tomlinson*, 150 USPQ 623 (CCPA 1966).

With respect to argument (c), while there is no disclosure in either Bergthaller et al. or Ma et al. of polyquaternary amine compound, note that either Bergthaller et al. or Ma et al. is

used as teaching reference, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach a certain concept, namely the use of anionic lightfastness agents in ink jet inks, and in combination with the primary reference, disclose the presently claimed invention.

With respect to argument (d), in response to applicants' argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Thus, it is the examiner's position that the combination of either Gundlach et al. and Bergthaller et al. or Gundlach et al. and Ma et al. is not based on hindsight but rather based on the fact that each reference is drawn to ink jet inks and given that there is proper motivation for combining either Bergthaller et al. or Ma et al. with Gundlach et al.

Applicants also argue that the criteria for the determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success. Both the suggestion and expectation of success must be found in the prior art, not in the applicants' disclosure.

However, given that Bergthaller et al. and Ma et al. each disclose that the use of anionic lightfastness agent in ink jet inks produces ink with improved colorfastness or lightfastness, it is clear that it is the prior art that suggests to one of ordinary skill in the art to utilize the anionic lightfastness agent in the ink jet ink of Gundlach et al. Further, given that Bergthaller et al. or Ma et al. are drawn to ink jet inks as is Gundlach et al. and given that both Bergthaller et al. and Ma et al. disclose the advantages of using anionic lightfastness agents, it is clear that it is the prior art, not applicants disclosure, that sets forth an expectation of success for using the anionic lightfastness agents of either Bergthaller et al. or Ma et al. in Gundlach et al.

With respect to argument (e), it is noted that Gundlach et al. disclose ink jet ink comprising water, non-polymeric salt, anionic dye, and polyquaternary amine compound, but there is no disclosure of anionic lightfastness agent. This is why Gundlach et al. is used in combination with either Bergthaller et al. or Ma et al. which are drawn to ink jet ink comprising dye (including anionic dye as found in Bergthaller et al.) and anionic lightfastness agent. Given the disclosure of either Bergthaller et al. or Ma et al., it is the examiner's position that an "obvious to try" standard was not used when combining Gundlach et al. with Bergthaller et al. or Ma et al. Rather, the references were combined given that there is motivation for one of ordinary skill in the art to combine Bergthaller et al. or Ma et al. with Gundlach et al., namely, the use of anionic lightfastness agent as presently claimed would function so as to improve the colorfastness or lightfastness of the ink.

Further, it is noted that the courts have held that "the motivation to combine can arise from the knowledge that the prior art elements will perform their expected functions to achieve



their expected results when combined for their common purpose.” *Miles Lab, Inc. v. Shandon Inc.* 997 F.2d at 878, 27 USPQ 2d 1123, 1128 (Fed.Cir. 1993). In light of this, applicants’ position that the examiner is using an obvious to try standard is refuted. Based on the teachings of either Bergthaller et al. or Ma et al., one of ordinary skill in the art would have recognized that anionic lightfastness agents as disclosed by either Bergthaller et al. or Ma et al. would function to improve colorfastness or lightfastness when used in ink jet inks and would have expected the lightfastness agents to function as such in other ink jet inks including that of Gundlach et al. Therefore, the examiner has established a prima facie case of obviousness.

With respect to argument (f), applicants firstly note that applicants maintain that there is no motivation to combine Gundlach et al. with either Vieira et al. or Yokoyama et al. for the reasons set forth in the amendment filed 11/21/03. Examiner also maintain the response to applicants’ position as set forth in the office action mailed 1/28/04.

Applicants further argue that obviousness cannot be established by combining references to arrive at the claimed invention absent some teaching, suggestion, or incentive supporting the combination and there must be some reason for the combination other than hindsight gleaned from the invention itself.

However, given that Vieira et al. and Yokoyama et al. disclose that the use of anionic lightfastness agent produces stable ink that will not fade or discolor (Vieira et al.) or produces ink with good resistance to light that will not clog printer nozzles (Yokoyama et al.), it is clear that there is a teaching in the prior art, not hindsight, that would lead one of ordinary skill in the art to combine Gundlach et al. with Vieira et al. or Yokoyama et al..

With respect to argument (g), applicants argue that while Gundlach et al. provides general guidance with respect to the desirable ratio of anionic dye to polyquaternary amine, it does not provide guidance in determining ratio of anionic lightfastness agent to polyquaternary amine as presently claimed.

While it is agreed that there is no explicit disclosure in any of the cited references regarding the number of cationic sites on the polyquaternary amine for every one anionic site of the anionic lightfastness agent and that the only disclosure in Gundlach et al. is that the number of cationic sites on the polyquaternary amine must be larger than the number of anionic sites on the anionic dye, it is the examiner's position that it would have been obvious to, as well as within the skill level of, one of ordinary skill in the art to recognize that the number of cationic sites on the polyquaternary amine must be larger than the number of anionic sites present in the ink regardless of whether the ratio is relative to anionic dye or anionic lightfastness agent. That is, precipitation will occur if the number of cationic sites is less than the number of anionic sites regardless of whether the anionic sites are present from the dye or the lightfastness agent. Based on the disclosure of Gundlach et al., it therefore would have been obvious to one of ordinary skill in the art to control the number of cationic sites on the polyquaternary amine per one anionic site on the anionic lightfastness agent to values, including that presently claimed, in order to prevent precipitation, and thus, one of ordinary skill in the art would have arrived at the present invention.

Applicants also argue that there is no disclosure in any of the cited references of the ratio of anionic dye to anionic lightfastness agent.

However, it is noted that col.5, lines 26-32 of Yokoyama et al. disclose that the ratio of anionic dye to UV absorbing agent is 0.1-10:0.2-10 or 0.01:1 to 50:1. Further Gundlach et al. disclose using 1-5% anionic dye, while Vieira et al., Bergthaller et al., and Ma et al. disclose using 0.1-2%, 0.2-8%, and 1-8% anionic lightfastness agent, respectively. Thus, when combining Gundlach et al. with either Vieira et al., Bergthaller et al., or Ma et al., it is calculated that the ratio of anionic dye to anionic lightfastness agent is 0.1: to 50:1 (Vieira et al.), 0.125:1 to 5:1 (Bergthaller et al.), and 0.125:1 to 50:1 (Ma et al.).

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
7/9/04